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## Case Report

# Massive inguino-scrotal herniation of urinary bladder in an infant (scrotal cystocele)—case report

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## ABSTRACT

Scrotal cystocele (massive inguino-scrotal herniation of urinary bladder) is an extremely rare event occurring in pediatric population. Authors present a case of a massive herniation of urinary bladder into the scrotum in a 1-year-old male infant who presented with markedly enlarged scrotum. Extremely rare case of massive urinary bladder herniation into scrotum, as we were able to find only one reported case in literature search. Enlarged scrotum in infants can be due to multiple causes in which one of them can be herniation of urinary bladder and it is key to know the contents of hernia sac before any intervention.

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## Background

Massive herniation of urinary bladder is also known as scrotal cystocele as termed by Levin in 1951 (4). Scrotal cystocele is considered the rarest type of herniation [11]. Most of the times it is asymptomatic if it is small [2]. Herniation of urinary bladder into inguinal canal can be partial or total; however, when whole bladder is herniated to the inguino-scrotal region, patients may present with obstruction, calculi, vesicoureteric reflux, hydronephrosis, infection, and acute renal failure

## Case presentation

A 1-year-old-male infant was presented to the radiology department with enlarged scrotum for the evaluation of kidneys to undergo intravenous urography (IVU). On physical examination, significantly enlarged scrotum was noted. The patient had no tenderness in the abdomen. No previous medical, family, psycho-social history, or relevant genetic information. No history of previous surgery. (Figs. 1A and B2)

IVU was performed on the infant demonstrating mild to moderate hydronephrosis and hydroureters bilaterally. The interval image taken after 3 hours showed drop-shaped opaci-

Abbreviations: IVU, Intravenous Urography.

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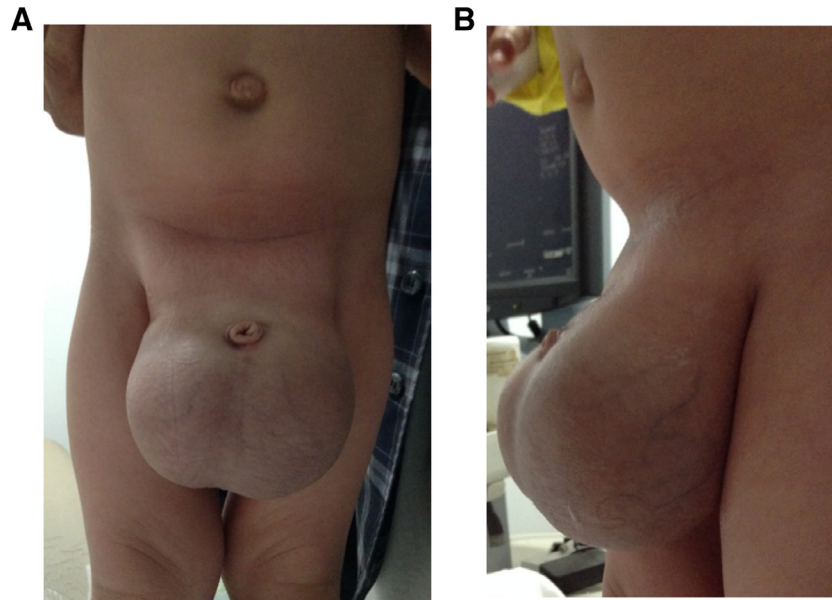
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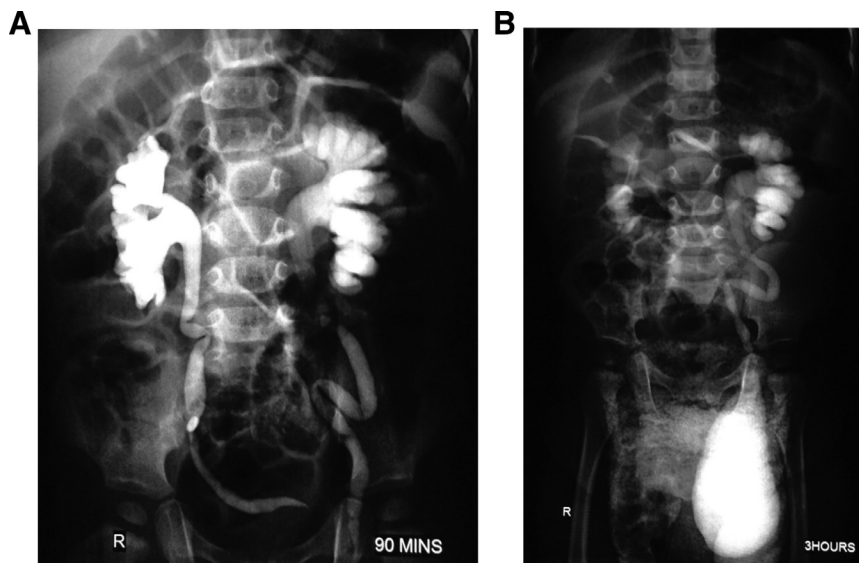
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**Fig. 1 – (A and B) Image of the patient shows significantly enlarged scrotum.**



**Fig. 2 – (A and B) IVU image of the patient taken at 90 minutes delay shows bilateral hydronephrosis and hydroureter. Right distal ureter is deviated towards left hemipelvis. The 3-hour delayed image demonstrates completely displaced opacified urinary bladder inferiorly toward the scrotum.**

fied urinary bladder herniating downward through left inguinal canal descending to the infrapelvis region in the expected area of scrotum. (Figs. 2A and 2B)

Ultrasonography was performed for the patient showing large cystic space corresponding to the urinary bladder. Alongside, herniation of the bowel loops was also noted within left inguinal and scrotal regions. No abnormal bowel loops dilatation was seen in the ultrasound examination.

Note: The ultrasound images not available.

The caretaker decided to take the patient abroad for the management and was lost to follow up.

### Discussion and conclusion

In pediatric population, congenital inguinal hernias comprise the most common surgical cases. Indirect inguinal hernias occur as a result of persistent patent processus vaginalis [1]. The herniated contents in inguinal region usually are small bowel

loops and mesentery; however, rarely it can contain (1) appendix, (2) Meckel's diverticulum, (3) ovary with fallopian tube, (4) sigmoid colon, and (5) urinary bladder [13]. Urinary bladder hernias were first described by French surgeon named Guy de Chauliac [2]. Levin, in 1951, termed scrotal cystocele for massive urinary bladder herniation into the scrotum [3,13].

Inguinal hernias of urinary bladder are subgrouped according to its relationship to peritoneum [2,7,11,12]. (1) First is para peritoneal hernia, in which urinary bladder is extraperitoneally located and positioned medially to herniated peritoneum. This can be seen in either direct or indirect inguinal hernia. (2) Second is intraperitoneal hernia, in which herniated urinary bladder is entirely covered with peritoneum. (3) Third is extra peritoneal hernia, urinary bladder herniates in inguinal region while peritoneum remains in abdomen [12]. The most common type is extra peritoneal [5,9].

Inguino-scrotal hernias of the urinary bladder are reported rarely, with a frequency of 1% to 4% of all inguinal hernias. [4,5,6,7,8,11,13,14] and mostly involving male patients who are above 50 years of age [1,2,6,7,8,9,12,14]. More than 50% herniation of urinary bladder is considered extremely rare [7]. Partial urinary bladder herniation is rarely reported in pediatric patients [1]. We could find only one case of scrotal cystocele (massive inguino-scrotal herniation of urinary bladder) in whole literature search; accordingly, our case is the second case of its own.

Usually, small bladder hernias are asymptomatic [6,7]; however, large inguino-scrotal hernias have difficulty in emptying, which needs second stage external compression [7,9].

IVU examination might show herniated urinary bladder evident by vesicle asymmetry in the pelvis. However, due to contrast material dilution, the herniation is rarely revealed. Cystography demonstrates the herniation easily either small or large [12], and is considered a gold standard while ultrasound can also confirm the diagnosis [3,4]. Computed tomography can provide necessary information aiding for surgical planning [4].

Standard treatment of urinary bladder herniation includes reduction or resection [6]; however, resection is reserved for necrotic herniated portion [1,7,10].

## Declarations

### Ethics approval and consent to participate

The manuscript has got ethical review exemption from Ethical Review Committee (ERC) of the authors' institution (French medical institute for Mothers and Children [FMIC]) as case reports are exempted from review according to the institutional ethical review committee's policy. Written consent is obtained from the participants for publishing the case [13].

### Consent for publication

Written informed consent was obtained from the parent of the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the editor of this journal.

## Availability of data and materials

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study (as this is a case report).

## Authors' contributions

All of the authors have participated sufficiently in the submission and take public responsibility for its content. NF helped in writing the manuscript, selecting the case and images, and corresponding with the journal. FF and MTA helped in supervising and revising the manuscript. All of the authors have read and approved the final manuscript.

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